WE CLAIM:

1. A perpendicular magnetic head comprising:

a magnetoresistive read device positioned to read perpendicular residual magnetic fields on a magnetic media in proximity with the read device;

a shield at least partially surrounding the read device comprising a magnetic material having an orientation selected to capture stray magnetic fields; and

a transverse magnetic bias field within the shield.

2. The magnetic head of claim 1 wherein the transverse magnetic field is in the range of 30-500 Oe.

3. The magnetic head of claim 1 wherein the transverse magnetic bias is applied by exchange pinning technique.

4. The magnetic head of claim 1 wherein the transverse magnetic bias is applied by field anneal to induce magnetocrystalline anisotropy.

5. The magnetic head of claim 1 wherein the transverse magnetic bias is applied by stress-induced magnetocrystalline anisotropy.

6. The magnetic head of claim 1 wherein the read device comprises a giant magnetoresistive device.

7. A perpendicular magnetic write head comprising:

a magnetoresistive write device positioned to write perpendicular residual magnetic fields on a magnetic media in proximity with the write device;

a shield at least partially surrounding the write device comprising a magnetic material having an orientation selected to capture stray magnetic fields; and

a transverse magnetic bias field within the shield.

8. The magnetic write head of claim 7 wherein the write device comprises a return flux pole of an electromagnetic write element.

9. The magnetic write head of claim 7 wherein the transverse magnetic field is in the range of 30-500 Oe.

10. The magnetic write head of claim 7 wherein the transverse magnetic bias is applied by exchange pinning technique.

11. The magnetic write head of claim 7 wherein the transverse magnetic bias is applied by field anneal to induce magnetocrystalline anisotropy.

12. The magnetic write head of claim 7 wherein the transverse magnetic bias is applied by stress-induced magnetocrystalline anisotropy.

13. The magnetic write head of claim 7 wherein the read device comprises a giant magnetoresistive device.

14. A magnetic data storage device comprising:

a perpendicular recording medium;

a read/write head;

drive electronics coupled to position the read/write head over selected locations of the perpendicular recording medium;

a read element within the read/write head;

a write element within the read/write head;

a shield at least partially surrounding the read device comprising a magnetic material having an orientation selected to capture stray magnetic fields; and

a transverse magnetic bias field within the shield.

15. A method for reducing flux concentrating capacity of a shield, said shield at least partially

surrounding a magnetoresistive read device positioned to read perpendicular residual magnetic fields on a magnetic media, said method comprising:

reducing permeability of said shield in a direction oriented perpendicular to said magnetic media by inducing a transverse magnetic bias field within said shield.

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16. The method of claim 15, wherein said step of inducing a transverse magnetic bias field within the shield further comprises inducing said transverse magnetic field bias within said shield by an exchange pinning technique.

17. The method of claim 17, wherein said step of inducing a transverse magnetic bias field within the shield further comprises inducing said transverse magnetic field bias within said shield by field anneal to induce magnetocrystalline anisotropy.

18. The method of claim 17, wherein said step of inducing a transverse magnetic bias field within the shield further comprises inducing said transverse magnetic field bias within said shield by stress-induced magnetocrystalline anisotropy.

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